

Notice of Allowability

Application No.

10/035,461

Examiner

Richard Hanig

Applicant(s)

CRUCE ET AL.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to paper dated 04/22/04.
2. ☒ The allowed claim(s) is/are 1-25.
3. ☒ The drawings filed on 04/19/04 and 11/09/01 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6. ☒ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☒ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date 3/23/04.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date 11/09/01
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☒ Interview Summary (PTO-413),
Paper No./Mail Date _____.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

DETAILED ACTION

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Mr. Dean J. Fisher on 01/12/05.

The application has been amended as follows:

In The Claims

1. (Twice amended) An apparatus for fluorescence lifetime and spectral measurements, comprising:
 - a driving/reference signal generator that generates a driving/reference signal, said driving/reference signal is amplitude and/or frequency modulated over time;
 - a mixing signal generator that generates a mixing signal, said mixing signal is amplitude and/or frequency modulated over time;
 - an excitation signal generator that generates an excitation signal, the driving/reference signal drives said excitation signal generator;
 - a signal detector that detects the emitted signal;
 - a mixer that mixes the ~~emitted~~ mixing signal with the driving/reference signal and produces the processor reference signal;
 - a mixer that mixes the emitted signal with the mixing signal and produces the data signal; and
 - a processor that extracts the fluorescence lifetime and fluorescence spectrum of the emitted signal from the comparison of the processor reference signal with the data signal using a chemometric analysis.
6. (Twice amended) A system for fluorescence lifetime and spectral measurements, comprising:
 - means for generating a driving/reference signal, said driving/reference signal means modulates the amplitude and/or the frequency of the driving/reference signal over time;

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means for generating a mixing signal, said mixing signal means modulates the amplitude and/or the frequency of the mixing signal over time,
means for generating an excitation signal, the driving/reference signal drives said excitation signal means;
means for detecting the emitted signal;
means for mixing the ~~emitted~~ mixing signal with the driving/reference signal to produce the processor reference signal;
means for mixing the emitted signal with the mixing signal to produce the data signal; and
a processor that extracts the fluorescence lifetime and fluorescence spectrum of the emitted signal from the comparison of the processor reference signal with the data signal using a chemometric analysis.

11. (Twice amended) A method for measuring the fluorescence lifetime and the fluorescence spectrum, comprising the following steps:

generating a driving/reference signal and modulating the amplitude and/or the frequency of the driving/reference signal over time;
generating a mixing signal and modulating the amplitude and/or the frequency of the mixing signal over time;
generating an excitation signal from the driving/reference signal;
detecting the emitted signal,
mixing the ~~emitted~~ mixing signal with the driving/reference signal and producing the processor reference signal;
mixing the emitted signal with the mixing signal producing the data signal; and
extracting the fluorescence lifetime and fluorescence spectrum of the emitted signal from the comparison of the processor reference signal with the data signal to measure using a chemometric analysis.

16. (Twice amended) A method of producing an apparatus for fluorescence lifetime and spectral measurements, comprising:

providing a driving/reference signal generator that generates a driving/reference signal, said driving/reference signal is amplitude and/or frequency modulated over time;
providing a mixing signal generator that generates a mixing signal, said mixing signal is amplitude and/or frequency modulated over time;
coupling an excitation signal generator that generates an excitation signal and a reference signal to said driving/reference generator;
providing a signal detector that detects the emitted signal;
coupling a first mixer to said excitation signal generator, said mixer mixes the ~~emitted~~ mixing signal with the driving/reference signal to produce the processor reference signal,
coupling a second mixer to said mixing signal generator, said mixer mixes the emitted signal with the mixing signal to produce the data signal; and

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coupling a processor to said first mixer and said second mixer, said processor extracts the fluorescence lifetime and fluorescence spectrum of the emitted signal from the comparison of the processor reference signal with the data signal using a chemometric analysis.

21. (Twice amended) A program storage device readable by a computer, tangibly embodying a program of instructions executable by the computer to perform method steps for a method for measuring the fluorescence lifetime and the fluorescence spectrum, comprising the following method steps:

- generating a driving/reference signal and modulating the amplitude and/or the frequency of the driving/reference signal over time;
- generating a mixing signal and modulating the amplitude and/or the frequency of the mixing signal over time;
- generating an excitation signal from the driving/reference signal;
- detecting the emitted signal;
- mixing the ~~emitted~~ mixing signal with the driving/reference signal and producing the processor reference signal;
- mixing the emitted signal with the mixing signal producing the data signal; and
- extracting the fluorescence lifetime and fluorescence spectrum of the emitted signal from the comparison of the processor reference signal with the data signal to measure using a chemometric analysis.

2. The following is an examiner's statement of reasons for allowance: With the agreed to amendment the errors in the claims have now made them agree with the intent of the specification.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Richard Hanig whose telephone number is 571-272-2329. The examiner can normally be reached on M-F: 8:00-4:30.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Georgia Epps can be reached on 571-272-2328. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

RAH
01/13/05


Scott J. Sugarman
Primary Examiner